



# NATIONAL SHIPBUILDING RESEARCH PROGRAM

PANEL SP-6



## PLANNING WORKSHOP

KANSAS CITY, MISSOURI

MARCH 9-11, 1992

REPORT OF PROCEEDING

NSRP #0344

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NSRP/SP6 MARINE INDUSTRY STANDARDS PLANNING WORKSHOP  
9-11 MARCH 1992

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This report is an account of the proceedings of a Marine Industry Standards Planning Workshop sponsored by the U.S. Department of Transportation's Maritime Administration and managed by Peterson Builders, Inc. under Contract #DTMA91 -84-C-41030. It was conducted under the auspices of the National Shipbuilding Research Program. Neither the United States, the Maritime Administration, nor Peterson Builders as contractor to the government, nor any person acting on behalf of the Maritime Administration, makes any warranty, expressed or implied, with respect to the accuracy, completeness or usefulness of the information contained herein.

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APRIL 1992

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EXECUTIVE SUMMARY

HISTORY OF THE WORKSHOP

In March of 1992, twenty representatives from standards setting bodies, the shipbuilding industry, and government met for two and one half days in Kansas City to formulate a blueprint for developing a coordinated marine industry standardization process and create a unified vision of the critical role standards can play in improving the global competitive position of the U.S. shipbuilding industry. The workshop produced a list of ten strategic advantages an industry standardization program can provide to U.S. shipbuilding; a vision statement for the United States Ship and Marine Technology standardization effort; nine strategic goals with which to guide this effort over the next one to five years; and thirty-seven short term **action recommendations tied to the strategic goal statements.**

The Workshop was originally identified as "SNAME Ship Production Committee, Panel SP-6, Standardization Project P-69" and was an expansion of effort under MARAD contract administered by Peterson Builders, Inc. as part of the Program Management function (Task P-58). It was also closely related to the Standards Master Plan Project (Task P-66). The Workshop was developed with the intent that it start with a clean sheet of paper, there would be no "sacred cows". In order to ensure the highest level of objectivity, a facilitator and standards technical advisor with no connections to the Marine Industry were retained to design and conduct the Workshop. Assisting them was an ad hoc committee consisting of the Panel Chairman, SP-6 Program Manager, and the Long-Range Plan Project Director. While originally planned to define the strategic direction of the NSRP Panel SP-6, the goals of the Workshop were broadened during the planning process to creating a forum where all parties interested in ship and marine technology standardization could come together and discuss industry level standardization efforts, and begin to develop a coordinated plan and goals for how these efforts should be managed.

OBJECTIVES

The stated objective of the project was to provide a planning retreat for U.S. Shipbuilders that would:

1. Facilitate the examination of past practices of the shipbuilding standards effort.
2. Facilitate the examination of the current goals of the shipbuilding standards effort.
3. Develop future directions for the shipbuilding standards effort.

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4. Identify past problems (critical issues) in establishing an effective industry wide standards program.
5. Define the role of the SP-6 Panel in industry wide efforts to develop and implement standards.
6. Facilitate cooperation among the diverse groups that develop, maintain, and use shipbuilding standards, as well as consider ways that each groups' standard setting efforts may best be coordinated with each other.

Toward this end the following goals and milestones statement was developed:

The purpose of the Workshop is to meet as leaders of the marine industry standardization effort to establish a working system of standards for the industry.

Towards this end, Workshop participants will:

1. Reach a shared understanding of the role of standardization in the marine industry. This understanding will reflect a consensus on the definition of standards/standardization and on the needs/strategic purpose of standards/standardization in the marine industry.
2. Examine the current standardization process to identify the ways that standards are currently established and used. This analysis will identify the strengths and weaknesses of the current system, the various organizations and institutions that use and generate standards and how they currently interact.
3. Examine/reach agreement on the requirements for a successful industry wide standardization strategy. This vision of the standardization process will reflect a consensus on the role of standardization (#1 above), and on how standard setting organizations (#2 above) should coordinate their activities.
4. Establish first step goals and objectives for moving toward their vision (#3 above).

**SUMMARY OF THE WORKSHOP OUTPUTS**

**THE TEN MOST IMPORTANT STRATEGIC ADVANTAGES  
OF AN INDUSTRY LEVEL SHIP AND MARINE TECHNOLOGY  
STANDARDIZATION PROGRAM**

In order to be used on an industry level, standards and standardization efforts must provide some form of competitive advantage to their users. For this reason, the

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early stages of the workshop were designed to identify the strategic or competitive advantages that an industry level program (as contrasted with yard standardization programs) could provide to U.S. shipbuilders. Inputs into this process included (1) a discussion of what participants expected from the Workshop, (2) a discussion of the definition of the terms "standards" and "standardization" with respect to ship and marine technology, (3) an overview of the significant trends and recent events in the shipbuilding industry, and (4) a presentation by L. Kruger (Specialist in Science and Technology, Science Policy Research Division of the Congressional Research Service), on recent government activity in the standardization area. The ten most important strategic advantages are:

- Reduced time from concept to delivery of ships to our customers
- Increased customer satisfaction
  - confidence
  - value
- Increased supplier base
- Improved industry profitability through
  - savings
  - cost avoidance
  - cost reduction
- Increased productivity
- Increased interchangeability of equipment
- Improved communications
- Reduced risk
- Improved quality of products and management processes (the ability to meet ISO 9000 requirements)
- Increased international awareness

**VISION STATEMENT**

**UNITED STATES SHIP AND MARINE TECHNOLOGY  
STANDARDIZATION EFFORT**

The ten strategic advantages of shipbuilding industry standardization served as the first input toward the development of a vision statement for the U.S. ship and marine technology standardization effort which was the focus of activity on the second day of the workshop.

**OUR SHIP AND MARINE TECHNOLOGY STANDARDIZATION PROGRAM SHALL SUPPORT INDUSTRY GLOBALIZATION. IT WILL:**

- Be a cooperative effort between standard setting bodies and standards users where participants will have well understood and effectively coordinated roles.
- Be recognized as an important element in global competitiveness by top level industry decision makers.

- Be guided by a vision communicated by user representative bodies including the SCA and the ECB of the NSRP.
- Be supported by joint funding from government and industry with government provided seed/catalyst funds and industry resource pooling.
- Support expedition of the internationalization of U.S. standards and the nationalization of foreign standards resulting in:
  1. Matching foreign standards with domestic counterparts.
  2. The rapid adoption of appropriate international and foreign standards.
- Maintain/increase support for U.S. representation in international standardization/standards programs.
- Commit to the full conversion to metric measurement and standards.

### **STRATEGIC GOALS**

#### **SHIP AND MARINE TECHNOLOGY STANDARDS PROGRAM**

The nine strategic goals listed below were developed based on the vision statement and subgroup brainstorm lists of strategic goals important for the implementation of the vision. Consensus voting and group discussion were used to identify important goal themes included in the final statement. Finally a consensus process was used to develop the final goal statements which are focused on a five year time horizon. This process carried the workshop to approximately noon on the third day of the Workshop.

##### **Goal 1**

Develop a process for communicating standards and standardization for ships and marine standardization to:

- Shipyard top management
- Industry top management
- Other industrial leagues
- The world market
- Working level yard managers

##### **Goal 2**

Implement a communications system to:

- Disseminate information on proposed and new standardization actions
- Serve as a sounding board for proposed new initiatives
- Communicate industries consensus position on proposed national and international standards and processes



**Goal 3**

Promote the national ship and marine technology standards program by:

- Enlisting greater yard participation through the development and implementation of a marketing plan.
- Reaching over 90% participation of the SCA member yards in the development process within 5 years.
- Increasing the awareness of the ship and marine technology standards program in the international market place.
- Establishing a network of members at all shipbuilders and allied industries to support product marketing through the use of standards.

**Goal 4**

Establish a firm structure between standards organizations and advisory groups with well defined roles and relationships which will:

- Identify, prioritize and manage initiatives which are responsible to the needs and goals of the NSRP.
- Accelerate the standards development process.
- Place emphasis on adopting and developing international standards.

**Goal 5**

Use SI as the standard of weights and measures in the U.S. shipbuilding industry within 3-5 years for design manufacturing and purchasing; and information and documentation.

**Goal 6**

Establish a source of standards from all international sources within two years.

**Goal 7**

Evaluate ISO and other foreign standards to identify equivalency to U.S. standards in four years.

**Goal 8**

Research, develop, and implement a plan to budget and to obtain funds from "nontraditional" government and trade association sources (e.g. DOD, DOT, DOE).

**Goal 9**

**Increase volunteers from shipyards.**

- To support ASTM F-25
- To support SP-6 through the promotion of joint utilization of professionals on SP-6 and F-25.
- To support ISO TC8, subcommittees, and working groups.
- To identify other standards bodies relevant to the industry and achieve representation on these bodies.

**ACTION RECOMMENDATIONS FOR THE NINE GOALS**

Finally, the afternoon of the third day of the Workshop participants began to develop action steps tied to each strategic goal statement. In order to do this participants first wrote and “posted” recommended actions for each goal to goal statements attached to walls around the Workshop room. A team of participants then codified the recommendations from individuals into summary statements for each goal. These summary statements were then presented to the entire group, discussed, and modified where necessary to reach consensus. These statements are listed as recommendations because there was not enough time during the Workshop to completely refine each statement and establish action step priorities or responsibility assignments. Nevertheless, as a whole, these action items establish a strong direction for the industry to take toward the establishment of a coordinated standardization effort. A list of recommended actions is presented on page 55.

**KEY ISSUES EMERGING FROM THE WORKSHOP**

A number of key issues emerged from the Workshop that are worth noting and may affect future efforts to establish a successful industry standardization program. Additional comments may also be found in the “Observations of the Technical Advisor”.

### OBSERVATIONS OF THE TECHNICAL ADVISOR

Bob Toth was engaged by SP-6 to assist with the Workshop by sharing his experience and perceptions with the organizers and participants. He has no connection with the marine industry but is widely recognized throughout the standardization community for his insight and appreciation of standardization issues. He has assisted many organizations in their long-range planning including multi-national corporations, major trade associations, and national and international standards developers. During the Workshop he advised participants of ongoing developments which could affect their plans; provided data on U.S. standardization activities and comparative foreign efforts; supported the participants by highlighting opportunities, and challenged them to focus on major issues and actions. He was invited to share his impressions of the Workshop and the challenges of standardization in the Marine Industry. His views are summarized here.

In comparison to many business and technical activities standardization appears to be fairly straightforward. Anyone who has been involved in standardization efforts quickly realizes, however, that standardization is, at best, difficult and is often very complex and frustrating. It is seldom easy. If standardization is difficult, planning a responsive, pragmatic, cost-effective industry-wide standardization program is considerably more difficult. This fact-of-life was readily evident at the Marine Industry Standards Planning Workshop. Considerable effort was expended to "... reach agreement on the requirements for a successful industry wide standardization strategy" (Goal 3). The resultant vision statement, goals, and actions are much like a standard: they reflect compromises and all interests are not necessarily accommodated. And, like a standard, this planning document will be a useful tool only if it is implemented and adopted widely.

#### Assessment of the Planning Process and the Results

##### Please don't shoot the messenger!

There is no question this Workshop was a valuable forum which aired numerous concerns, complaints, and frustrations. One of the most useful aspects of workshops such as this is the free-wheeling atmosphere which encourages participants to identify basic issues and problems. The key to successful long-range planning, of course, is definitive identification of basic issues and their forcing functions.. A review of these Proceedings demonstrates that the process worked well defining problems and issues. This lead to a comprehensive vision statement and an industry-specific list of benefits or strategic advantages which the marine industry might expect from its standardization program.

It was evident at this stage, however, that among the participants the most readily identified affinity group was the standardization specialists. If not a majority they

were the most outspoken. As a result the overall planning effort appeared to be driven by continued acceptance of long-standing practices, existing organizations, and present structures. Rather than being business driven, proposed actions appear to focus on maintaining the status quo. While this approach might very well have been a final priority recommendation, it appeared to this observer that insufficient opportunity was afforded to evaluation of the existing establishment and consideration of alternatives. Rather than starting with a clean slate and open minds, it appeared that maintenance of existing operations was a pre-condition.

A more incisive appraisal of the current state of standardization in the marine industry and performance of the key players might have resulted if a larger portion of the participants was from senior management. Also conspicuous by their absence were representatives of the subcontractors and suppliers which are vital partners in the industry, as well as its major customer, Naval Sea Systems Command.

Like some other industrial sectors, the marine industry may not yet have sufficient appreciation of the fact that standardization actions are business decisions. Standardization planning is business planning. We may not want to go to the extreme cited by the Commission of the European Community: "Standards are too important to leave to standardizers", but this statement does remind us of the value of involving those responsible for business decisions along with the standardizers.

### Tunnel Vision

Further evidence of the focus on existing institutions was the concentration on standards which document parts, components, and design features. This is the field which marine industry standardizers traditionally have addressed. Most of this industry appears to have been after-the-fact documentation of items which have been in use for many years. The true worth of new documentation (standards) for items which have been defined by other accepted methods is questionable. Today, many industries invest their scarce standardization resources in high-payoff areas such as the standards for systems, manufacturing technology, interoperability, intra- and inter-industry communications, and standards which impact safety, hazardous materials, and pollution. Hardly any consideration was given to reorganizing or redirecting the industry's standardization efforts to these high-payoff, albeit challenging areas.

The Vision Statement which the Workshop participants developed after considerable effort is a milestone document for the industry. It succinctly establishes long-term, encompassing goals, and changes in direction warranted by shifting global business conditions. However, the action plans and recommendations to implement the Vision Statement appear truncated when compared to goals established in the Vision Statement.

The Vision Statement, for example, provides for " ...a cooperative effort between

standards setting bodies and standards users... ” Rather than committing to utilize the standards developed by other well recognized standards setting bodies the action plans concentrate on initiatives which would funnel standards setting into F-25 and TC-8. There is good reason, of course, to concentrate industry-unique standards development into specialized technical committees. But the marine industry is a user of a wide range of items ranging from basic materials to galley equipment. These Proceedings define a vertical standardization structure in which all marine industry standardization is accomplished within the few industry-specific standards setting bodies.

Most other industries take a broader view. They utilize intra-industry standardization councils or planning panels to manage a horizontal standardization program. While they oversee their industry-specific standards committees they also track relevant activities among other standards setting bodies and, when appropriate, take steps to assure that their industry's needs are accommodated. The marine industry should give further consideration to the ways that industry-wide standards planning, coordination, and management can be accomplished. This Workshop has identified most of the criteria for an assessment. This assessment could very well reinforce and support the existing approach, in which case those charged with implementing the action plans will have a clear mandate. It is essential that the industry recognize that choosing a vertical or horizontal approach to industry-wide standardization has a fundamental impact on all subsequent actions.

#### Subsidized voluntarism - an oxymoron

This observer has studied in detail the operations of dozens of U.S. standards developing organizations and the standardization system of more than 15 countries. There are a few instances where foreign government agencies provide some support to the staff of standards developers, and one or two U.S. Government agencies have contracted with voluntary standards developers to prepare a few standards for particular projects, but the volunteers who constitute the standards committees are not subsidized. The only exceptions are the few committees working on consumer products which occasionally provide travel funds for those representing consumer interests. Some organizations will also cover the travel expenses of their representatives at foreign meetings. The volunteers participating in standards development -- usually those with the most to gain -- are supported by their employers or clients.

The free market approach to standardization which characterizes our U.S. voluntary standardization system provides the mechanism for setting priorities, and full consideration of all factors -- technical and economic -- which will affect users of the standards. This voluntary, free market approach to standardization has been touted by both the U. S. public and private sectors as one of our major strengths. Many foreign standardization systems are being modified to emulate the best features of the U. S. system.

Experienced managers of voluntary standardization programs have long recognized that standardization activities can only be supported or justified when they fill a demonstrable need and where the benefits can be readily discerned. Further, the benefits must be perceived as accruing directly to individual companies in addition to industry at large. Support for standardization cannot be based on altruism. It is not a recipient agency of a United Appeal campaign. Standardization actions are business decisions and should be driven by business considerations, otherwise the resultant standards will not meet the requirements of the businesses which would be expected to use them. Note too that this Workshop addressed the needs of industry standards -- voluntary standards not government mandates or regulations.

With these principals in mind we observe that Goal 8 is to obtain annual funding commitments in the order of \$500,000 to \$2 million. As definitive program elements have yet to be defined it is difficult to judge whether these estimates are reasonable. It is apparent, however, that they represent more than just the costs of supporting staff.

#### What's next?

These observations, as requested, have concentrated on some of the more basic standardization issues which the marine industry must address. In no way is it intended that these observations reflect adversely on the accomplishments of the Workshop. The Vision Statement in itself is a major accomplishment. Many key issues were addressed and pragmatic decisions and recommendations resulted. Some of these include:

Recognition of the need for full conversion to metric measure;

Adoption of foreign and international standards and increased participation in international standards development;

Involvement of "top level industry decision makers" in setting goals, priorities, and oversight of the industry's standardization program.

Communication with and involvement of these decision makers constitute the majority of tasks outlined in the action plans. Another action plan which is well defined deals with metric conversion. While these action plans are quite definitive, the remainder reflect a range of initiatives some of which contravene other proposed actions. As noted above, the premise of maintaining the status quo prevails.

The basis for voluntary industry standardization is the consensus principal. Consensus building is just as important to standardization planning as it is to standards development. It is recommended that the output of the Workshop -- the Vision Statement, the Goals, and a consolidation of the Action Steps and

Recommendations, including majority and minority positions -- be treated like a draft standard. It might be sent to a wider, more representative segment of the industry with a survey to elicit views on detailed aspects. Considering the need for background and explanations it would probably be better to arrange presentations to the Shipbuilders Council and the National Shipbuilding Research Program's Executive Control Board. They could then provide their views through an in-depth survey.

Workshop participants recognized the need for commitment and support from senior management. Action should be taken to involve senior management in defining the industry's standardization program. It is essential that they feel like stakeholders. This Workshop has accomplished the essential first step. The next step is to develop an industry-wide consensus for a program which the marine industry and its management accepts as its own.

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**LIST OF PARTICIPANTS**

**MARINE INDUSTRY STANDARDS PLANNING WORKSHOP**

<b>NAME</b>	<b>TITLE</b>	<b>COMPANY</b>
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Doug Geheb	Mgr. Process Engineering	Bath Iron Works
BobbyJ. Griffin	Project Engineer	Avondale industries
Manuel Gutierrez	Managing Director Tech. C&S	ASME
Joe Hamilton	Chief Mechanical Engineer	CDI Marine
Howard Hime	Assistant Div. Chief MTH	U.S. Coast Guard
Al Horsmon	Research Engineer	University of Michigan
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Gary North	Manager, CASD	MARAD
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Bob Schaffran	Division Head Design & Manufacturing System	NSWC
Tom Soik	Consultant	Soik Associates
Georg Thomas	Director of Engineering	Peterson Builders, Inc.
Rick Thorpe	VP Export & Tech. Research	Shipbuilders Council of America
Bob Toth	President	R.B. Toth Associates
Mike Wade	General Engineer	NSWC
Larry Walker	Manager - Special Projects	Trinity Marine
Stuart Warren	Engineering Supervisor	Newport News Shipyard



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**WORKSHOP STAFF**

**JOHN F.S. BUNCH: FACILITATOR**

Dr. Bunch is currently an assistant professor in the School of Business at Kansas State University where he teaches courses in organizational behavior and the legal/social environment of business. He received his Ph.D. in Business Administration (Management) from the University of North Carolina in 1989. Dr. Bunch was the co-facilitator of the 1990 NSRP Long Range Planning Retreat.

**DENNIS W. KRUMWIEDE: CO-FACILITATOR**

Dennis Krumwiede is currently an instructor of production and operations management in the School of Business at Kansas State University. Mr. Krumwiede served in the Navy from 1969 to 1972 aboard Nuclear Submarine Tenders and Destroyers. He has 18 years experience as a practicing industrial engineer/manager primarily in the fields of aerospace and telecommunications. After receiving his Master of Engineering Degree (MEEN) from the University of Colorado at Boulder in 1989, Dennis was director of production at Tycho Technology, Inc. Most recently, before coming to K-State, he served as a consultant with the National Atmospheric Research Corp. on the HURDLS project.

**ROBERT B. TOTH: TECHNICAL ADVISOR**

Bob Toth has earned an international reputation for applying modern management techniques to all aspects of standardization. He is the author of numerous papers and books, including The Economics of Standardization, the 5th (1984) and 6th (1991) editions of Standard Activities of Organizations in the United States, and Federal Government Certification Programs for Products and Services. He compiled and edited for the American National Standards Institute (ANSI) the comprehensive reference - Standards Management: A Handbook for Profits. Mr. Toth's company provides consulting and professional services in all aspects of standardization. Most recently, in 1991, he received the Meritorious Service Award of the American National Standards Institute.

**DOUGLAS J. RUSCH: WORKSHOP ASSISTANT**

Douglas Rusch is currently employed at Peterson Builders, Inc. as an Industrial Engineering Co-Op/Intern through the cooperative education program at the University of Wisconsin Platteville.

## GOALS

### MARINE INDUSTRY STANDARDS WORKSHOP

The purpose of the workshop is to meet as leaders of the marine industry standardization effort to establish a working system of standards for the industry.

Towards this end, workshop participants will:

1. Reach a shared understanding of the role of standardization in the marine industry. This understanding will reflect a consensus on the definition of standards/standardization in the marine industry.
2. Examine the current standardization process to identify the ways that standards are currently established and used. This analysis will identify the strengths and weaknesses of the current system, the various organizations and institutions that use and generate standards, and how they currently interact.
3. Examine/reach agreement on the requirements for a successful industry wide standardization strategy. This vision of the standardization process will reflect a consensus on the role of standardization (#1 above) and on how standard setting organizations (#2 above) should coordinate their activities.
4. Establish first goals and objectives for moving toward their vision (#3 above).

**PROCEEDINGS: DAY ONE**

**MONDAY, MARCH 9, 1992**

**EXPECTATIONS**

Following introductions and review of the Workshop's ground rules, the participants were asked via a brainstorming session for their expectations of the Workshop over the next three days. Expectations were:

- Consensus for National Marine Industry Standards approach
- Identify key organizations for Marine Industry Standards
  - define their interrelationships
- Define/develop role of International standards in the U.S. Marine Industry
- Define/develop model of national organization
- Promote "Theory of Competition through Cooperation"
- Do not create separate 'rice bowls'
  - need cooperation
- Define why we need standards and what kind of standards we need
- Who is our customer and who are we?
- Maximize use of existing standards
- Shipbuilders view of what type standards are needed
- How can acquisition time for ships be shortened?
- How can we shorten design time for ships?
- Do we need more time for production engineering?
- How can we compete on the world market?
- How can industry go to metric standards?
- How can we get shipbuilders to work as a national industry rather than individual competitors?
- How do you get a standard developed?
- Are we trying to get U.S. industry standards adopted by the ISO?
- Get a handle on U.S. standards (94,000)
- Borrow or steal good standards from others (the world)
- Fostering cooperation within Marine Industry in standard development

Alternate secretariats for Marine Industry standardization  
Identify Marine Industry - wide problems that standards can solve:

- systems
- interchangeability
- regulations
- schedules (throughput)
  - early definition of product/process
- standards addressing new technology
- risk minimization

Action plan to begin to get a handle on the number of standards  
Focus on cooperative strategy  
Anti-trust plan of action

## **LAYING THE KEEL**

In order to identify the various facets of “Standards” and “Standardization”, the participants were divided into five subgroups and assigned the task of developing definitions for the terms. Definitions were:

### **STANDARD**

- (1) A description of an item that has more than one application or can be used more than once.
- (2) A set of minimum or maximum requirements.
- (3) Consensus approved methods, designs, and materials (system or component) to be applied to repeatable processes to ensure a level of performance, safety, and quality; to maximize your cost effectiveness and cost efficiency.
- (4) Documented process/method, test or component which will assure a level of performance and minimize cost, and which is recognized by the Maritime Community.
- (5) Cost effectiveness which is based on sound engineering principles and receives its authority through consensus; represents all types (ie, performance, standard test method, specification); form, fit, function.

### **STANDARDIZATION**

- (1) Process of making optimum use of standards.
- (2) Process of developing and applying standards by the consensus approach.
- (3) Process -by which standards are developed and implemented by way of a strategy which is market driven which includes involvement of manufactures, users, suppliers, and regulations.
- (4) Methodology for applying standards.
- (5) Process to achieve standards.

The definitions for “Standards” were later integrated by the group into one definition which would be used throughout the remainder of the Workshop.

### **“STANDARD DEFINITION” OF A STANDARD**

- (1) Prescribed designs, processes, rules, and procedures used in repeatable operations to ensure a predetermined level of performance and interchangeability.

Key words within this definition were further defined:

Performance

- (1) Product quality and reliability
- (2) Safety
- (3) Environmental protection
- (4) Producibility

Interchangeability

- (1) Weight
- (2) Space
- (3) Interfaces (connections)
- (4) Input
- (6) Services (electric power, water, air, etc.)

The definitions were further expanded upon by brainstorming critical elements of the Standards and Standardization concepts.

STANDARDS

Critical Elements

Inoperability  
implementation  
Acceptability  
Economy  
Applicability  
Trade barriers  
- Commercial  
Cost avoidance  
Dimensions  
Performance  
Quality System Benchmark  
Consensus  
Environmental protection

Interchangeability elements  
Enforcement  
Cost effectiveness  
Currency  
Interchangeability  
- National  
- international  
- Corporate  
Minimization of risk  
- Customer  
- Manufacturer  
Communication  
Method

**STANDARDIZATION**

**Critical Elements**

Efficiency  
Philosophy (QC benchmark)  
Product certification  
Distribution  
Commitment  
Review process  
Interchangeability  
Acceptability  
Minimization of risk  
- customer risk  
- manufacture  
- etc.  
Dissemination

Strategy  
Process  
Documentation  
involvement  
Cost avoidance  
Applicability  
Level of process  
Trade barriers  
Implementation  
Enforcement  
Why/purpose  
- Market driven  
- Government driven

**GUEST SPEAKER:**

Len Kruger of the Science Policy Research Division, Congressional Research Service presented the current state of affairs regarding Standards and Standardization on the domestic and international scene. An abstract of his comments is attached as Appendix A.

**THE SHIPBUILDING INDUSTRY: DEFINING THE ENVIRONMENT**

The current environment of the U.S. Shipbuilding Industry (Events [E], Developments [D], Trends [T], Key Players [K]) was delineated into Domain Elements of PRODUCTS, TECHNOLOGY, SUPPLIERS, CUSTOMERS, AND COMPETITION/REGULATION. The purpose of this session was to identify the general trends and significant issues facing U.S. Shipbuilding today that must be considered when developing an industry standards program. Participants did a silent generation of E, D, T, K's on Post-its and assigned them to their respective Domain Element. Participants then voted individually on the E, D, T, K's, that they believed could be most significantly affected by standards or standardization. Each voter was allowed ten votes (dots) that could be applied singly or in multiples to any of the items on the lists. The lists and voting results:

PRODUCTS	Post-its	Dots
Adopt metric system	4	25
Navy -- Commercial	9	9
Increasing commercial market		
Foreign standards adoption	1	14
Hi-tech commercial ships	4	4
New generation tankers	1	6
Double hull tankers	3	3
Products cost driven vs. Performance/quality (must address development and use of standards	3	3
Standard ship design	1	5
Capital resource allocation	1	3
More volunteerism	1	3
Stagnated industry	3	
Focused direction of standards	1	2
Composites development	1	2
CAD, CALS, and networking	1	2
IMO meeting results	1	2



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<b>PRODUCTS CONT'D</b>	<b>Post-its</b>	<b>Dots</b>
Cruise/Passenger Ships, North/South trade ships	1	1
Export deck house to foreign yards		
One man pilot house	1	1
Electronic access to MIL-SPECS	1	
Improve research and development	1	
Open TOR Container Ships	1	
Stealth technology	1	
GPS technology	1	
Fiber optic technology	1	
Oil spill concerns	1	

<b>SUPPLIERS</b>	<b>Post-its</b>	<b>Dots</b>
Declining supplier base		12
Suppliers looking global		8
Coast Guard approval drives up costs		5
Opening up US market to foreign suppliers (Iacocca)		5

<b>CUSTOMERS</b>	<b>Post-its</b>	<b>Dots</b>
Increase in international commercial market and limited US commercial market	9	12
Decline of military budgets	10	10
International market emphasis	4	14
Customer requirements	3	7
Competitiveness of small yards	5	3
SeaLift market	5	
Double hull vs mid deck	3	
Impact of perceived future wars	3	
Standards related awareness	3	
Trading block preference items	2	1

<b>COMPETITION/REGULATIONS</b>	<b>Post-its</b>	<b>Dots</b>
Competition	14	20
Environmental regulations	12	14
Cooperation and coordination in standards	12	7
International standards	8	7
Key players in standards	13	
Foreign subsidies	9	2
Funding for standards	1	1

Subgroups analyzed the voting results into a list of critical elements as follows:

Stronger need for volunteerism.

- \* firms
- \* professionalism

Government won't throw money at Industry problems.

- \* government sources are drying up.

Maritime welfare system.

Government does not have the money for problems either.

Leadership - who will lead the effort?

Adopt existing standards rather than invent.

Both suppliers and yards are reevaluating the world as market.

Metric issue must be resolved to compete globally.

Industry is in trouble.

- \* No resources
- \* No slack grace period to solve problems

World competition is a key factor.

- \* Industry not coming at this from healthy position.
- \* No resources
- \* No grace period
- \* No slack

Industry always looks to someone for help.

- \* Maritime warfare (welfare???) system
  - > No cooperation

## **DEFINING THE VISION**

Participants brainstormed the strategic advantages of an industry standardization program, the goals such a program should achieve, and ranked the most significant benefits/purposes as follows:

<b><u>SCORE</u></b>	<b><u>STRATEGIC ADVANTAGE</u></b>
131	Reduced time from concept to delivery
100	Increased customer satisfaction
	- confidence
	- value
87	Increased supplier base
87	Standardization revenues
	- savings
	- cost reduction
	- cost avoidance
67	Productivity
65	Interchangeability of equipment
59	Improved communications
56	Reduced risk
39	Quality control (ISO)9000
39	Increased value to the customer
34	Increased international awareness
29	Decreased inventory
28	Shared technology
26	Joint Ventures
	- nationally
	- internationally
23	Improved internal "customer" relations (communications)
19	Expanded work force
	- work force pool
	- human resources
19	Management control
11	More efficient ship repair
10	Streamlined training

**As a reality check, participants were asked to identify the disadvantages of standardization, both real and perceived:**

**Restricts innovation**  
**Currency**  
**Increased costs**  
**Standards cost money**  
**Liability**  
**Who is liable?**  
**Presumption - standards are the best choice**  
**Loss of competitive edge**  
**Comoditization**

**Summarizing the previous exercises, the 70 most important strategic advantages to the Marine Industry our industry standardization program will provide were identified as:**

**Reduced time from concept to delivery of ships to our customers**

**Increased customer satisfaction**

- confidence**
- value**

**An increased supplier base**

**Improved industry profitability through**

- savings**
- cost avoidance**
- cost reduction**

**Increased productivity**

**Increased interchangeability of equipment**

**Improved communications**

**Reduced risk**

**Improved quality of products and management processes (the ability to meet ISO 9000 requirements)**

**Increased international awareness**

**PROCEEDINGS: DAY TWO**

**TUESDAY, MARCH 10, 1992**

**PRESENTATION: ISO/TC-8**

**Charles Piersall, Chairman of the U.S. Technical Advisory Group (TAG) to TC-8 of ISO, presented an overview of shipbuilding standards on the international scene. See Appendix B for presentation foils.**

**MAPPING THE SHIPBUILDING STANDARDS DOMAIN**

**A list of key players in the Marine Industry Standards process was brainstormed as follows:**

<b>Standard Writing Bodies</b>	<b>Navy</b>
<b>ASTM/ILO/ANSI/MSS/IEEE/SAE/ISO</b>	<b>Allied industries</b>
<b>AWS/ABS/CEO</b>	<b>Users</b>
<b>Suppliers/vendors</b>	<b>Dept of Commerce</b>
<b>Shipbuilders</b>	<b>National Cargo Bureau</b>
<b>Facilitator/secretariats</b>	<b>Local Government</b>
<b>Operators</b>	<b>SAGE (Strategic Advisory Group for the</b>
<b>State Government</b>	<b>Environment</b>
<b>EPA</b>	<b>Design houses</b>
<b>Foreign Competition</b>	<b>Private Yards</b>
<b>Owners</b>	<b>Universities</b>
<b>Underwriters Lab</b>	<b>Shipbuilders Council</b>
<b>EMEC (European Marine Equipment</b>	<b>SP-6 and NSRP</b>
<b>Council)</b>	<b>Army</b>
<b>EC Commission</b>	<b>IACS (International Association of</b>
<b>National Oceanographic &amp; Atmospheric</b>	<b>Classification Societies)</b>
<b>Administration</b>	<b>Navy yards</b>
<b>Foreign Classification Societies</b>	<b>Customers</b>
<b>Ship repairers</b>	<b>- internal</b>
<b>Public yards</b>	<b>- external</b>
<b>Tier one yards</b>	
<b>Tier two yards</b>	
<b>National Sanitation Foundation</b>	
<b>Government</b>	
<b>- Coast Guard</b>	
<b>- NAVSEA</b>	
<b>- MARAD</b>	

**From this list, groups of key players (developers/managers of the standardization process) were identified as follows:**

**Producers of products**

- doers = standards writers
- suppliers
- shipyards
- designers

**Funding Entities**

- government
- sponsors

**Regulatory vs voluntary standards**

**Regulators and external constraints**

- Classification societies (ABS, etc.)
- Coast Guard
- Navy
- EPA

**Users/Consumers**

- private
- government
  - \* Navy
- shipbuilders
- ship repairers
- design firms
- ship operators

**Facilitator/Supporters**

- SP-6
- Navy
- publishers (ASTM, ISO)
- SCA

**General interest Groups**

- insurance underwriters
- consultants
  - \* universities

**Suppliers**

These groups were subsequently condensed into five: USERS, REGULATORY/EXTERNAL CONSTRAINTS, FACILITATORS, PRODUCERS OF PRODUCTS, and GENERAL INTEREST GROUPS. Teams were assigned to each of these key player groups to identify current Inputs, Outputs, Roles, and Goals. They reported out as follows:

1 ) Users

Current goals

Remain current with technology

Use standards

Inputs

Making ourselves aware of the applicable standards

Services/Availability to those items made to the standards

output

What's missing

From other key players

Consistently applied rules/less ambiguous

Consolidation of regulations

Procedures to build equipment to the standards

2) Regulatory/External Constraints

Role

Constraints

User

Composed of

USCG/EPA/FCC/etc.

ABS/IACS/etc.

MARAD

Navy

Goals

Maintain minimum safety

Maintain desired quality

Maximum use of standards (more globally)

Inputs (needed)

Latest technology

IMO/IACS

Feedback

outputs

Regulation/guidelines

Rules

Contractual requirements

**Significance**

Better standards improve regulations - more

Acceptable

Regulation control standards

**Needs**

Covered above

**3) Facilitators**

**Roles/Goals**

Establish communication network:

- keep abreast of/participate in global standards developments and shortfalls

- raise domestic awareness/need to standardize

- make available/disseminate foreign standards where applicable

- use/represent/market domestic standards

Strategize/Prioritize domestic standards effort

Establish resource base for the first two roles/goals above

Put National Maritime Coalition together to execute

**Inputs**

Needs of Constituent

Regulators

International/domestic standards bodies

**output**

Execute plan

- reactive

- pro-active

**Needs**

Commitment to the goals of the plan

**4) Producers of Products**

**Roles**

Users, assessors, producers

**Goals**

Minimize costs

Increase marketability

Optimize processes

**Inputs**

Standards are available

Get active in producing standards

Review for utility

Understand purpose of standards

Management commit resources



**outputs**

**Products of consistent:**

- quality
- operation
- functionality

**5) General**

**Roles**

Consultants  
Universities  
Other trade association (API, AWO, AIA)  
Insurance  
Financial

**Goals**

Dollar participate  
S.B. industry success  
Limit liability (insurance)  
Education  
Research

**Inputs**

Money  
Clear communication  
- suppliers

**outputs**

Reports  
Insurance  
Workshops

**Needs**

Cooperation  
Less adversarial

The relationship between these groups was analyzed using the matrix shown in Figure 7. The teams assigned to each group rated the group's relationship to the other groups using the following rating model.

1. The importance of that relationship to your Key player group.  
Enter 1-5 in the cell (1 = not important, 5 = very important).
2. The interaction level between your group and the other group.  
L = Little interaction  
M = Moderate levels of interaction  
H = High levels of interaction
3. The type of interdependence that characterizes the relationship.  
Use the following symbols:
  - o = Independent.: Your group's work and/or rewards (outcomes) are not affected much by the other group's work and reward.
  - > = Serial interdependence.: The exchange is primarily one way.
  - <--> = Reciprocal interdependence: The exchange is dynamic and two way. You are both supplier and customer. Work is handed back and forth as it is processed.
4. Whether the interdependence is positive or negative.
  - (+) = Positive interdependence: While the groups do not have to interact to get work done, their reward/profits are positively correlated.
  - (-) = Negative interdependence: While the groups do not have to interact to get work done, their rewards/profits are negatively correlated.

Each relationship in the Matrix (Figure 1) will have four attributes listed from top to bottom:

- Importance
- Interaction Level
- Type of Interdependence
- Positive or Negative Interdependence

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**MATRIX OF RELATIONSHIPS**

**Matrix of Perceived Involvement of Key Players  
 In the Ship and Marine Technology Standards Arena**

	USERS	PRODUCERS	REGULATORS	FACILITATORS	OTHER
<b>Users (Yards)</b>	1 L o	5 H <--> +	5 H <--> +-	3 L <--> +	2 L --> +
<b>Producers Allied Suppliers</b>	5 H --> +	4 M/H <--> +	4 M -->	4 L <--> +	3 L --> +
<b>Regulators</b>	4 H <--> +	4 H <--> +	5 H <--> = +	3 M <--> +	1 L 0 N/A
<b>Facilitators (support)</b>	2 L --> +	3 M <-->	5 L -->	3 M <--> +	1 L 0 N/A
<b>Other (General) (Research)</b>	4 M --> +	3 L -->	3 M -->	5 M <-->	2 M <--> +

Figure 1

## REFINING THE VISION

Participants were challenged with the development of a consensus model of the relationships and processes characterizing the ideal program. They were asked to think in terms of the following dimensions:

- Structure
- Processes and procedures
- Inter-group relationships and norms
- Support mechanisms & systems
- Outcomes & results

Four teams were provided with a set of five handouts, each with a separate dimension heading. The handouts were circulated and each team member individually listed as many qualities and characteristics (Signals of Success) of the ideal Marine industry Standards Program for each dimension as possible. A second circulation provided for review of others' Signals of Success and additions and comments. Each team then summarized their characteristics of a successful Marine Industry Standards Program.

## SIGNALS OF SUCCESS; TEAM REPORTS

### TEAM ONE:

#### Structure:

Use ANSI or other existing group to:

Facilitate  
Coordinate  
Communicate

Needs to produce functional shipbuilding standards system.

#### Processes/Procedures:

Fast-track review  
Evaluation - selection  
- Acceptance of MI standards

#### Relationships and Norms:

Open communication  
Parallel minded discussions  
Government participants as equal partners, not as contracting officers.  
PALS approach

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**Products and Results:**

Useable standards addressing:

- Product
- Process
- Technology
- Design
- cost

ISO, EC and foreign National MI standards accepted by U.S. Reg. Bodies. (Where applicable)

**Support:**

- Volunteerism - top talent (Yards and suppliers)
- Adequate travel dollars
- Some appropriate level of cost shared by NSRP \$ for special Eng. analysis, reports.

**TEAM TWO:**

**Structure:**

The standard program structure should follow the current ISO structure

**Processes and Procedures:**

- Make sure that standards receive constant support and proper review prior to adoption.
- Standards Program should maintain currency in all standards.

**Relationships and Norms:**

- Open and cooperative interchange of ideas and data
- Clear-cut flow of responsibility and authority
- Courtesy and respect for others' positions

**Structure, Mechanisms, and Systems:**

- Industry wide standards
- Program should be supported by the benefactors of the program
- National/International standards program should be funded by the government

**Outcomes and Results:**

- Reduction in ship production costs
- Quality product
- Customer satisfaction

**TEAM THREE:**

The team produced a flow chart along with their notes on structure, outcomes, results, etc. The flowchart began with the board of directors who then gave feedback to the NMPB priorities. From these priorities standards organizations (ie, ASTM, IEEE, SAE, etc.) were assigned work which ultimately ended with a Marine Industry database.

**Processes and Procedures:**

- Fast track review, evaluation, selection, and acceptance of Marine Industry standards

**Relationships and Norms:**

- Open communications
- Open minded discussions
- Government members of groups and cooperatives working as equal partners
- A "PALS" approach

**Structure, Mechanisms, and Systems:**

- More volunteers
- Good top talent from yards and suppliers
- Adequate travel funds
- Some appropriate level of cost-shared NSRP for special engineering analysis report

**Products and Results:**

- Useable standards addressing:
  - product
  - design
  - cost effectiveness
  - latest technology

- ISO, TC-8, EC, and where appropriate foreign national Marine Industry standards accepted by all regulatory bodies impacting U.S. yards

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**TEAM FOUR:**

The team constructed a flowchart which started with SCA to NSRP to SP-6 where it branched off into two groups, ASTM F25 and Other Standard Bodies.

**Processes and Procedures:**

- Timely consensus standards
- Mandated usage
- Timely review process (after approval)

**Outcomes and Results:**

Marine Industry standards become recognized as credible source of information for the industry.

The four teams were subsequently combined into two caucuses to take the outputs of the teams and form them into caucus models of the ideal M.I. Standardization Program. These are shown as Figures II and III.

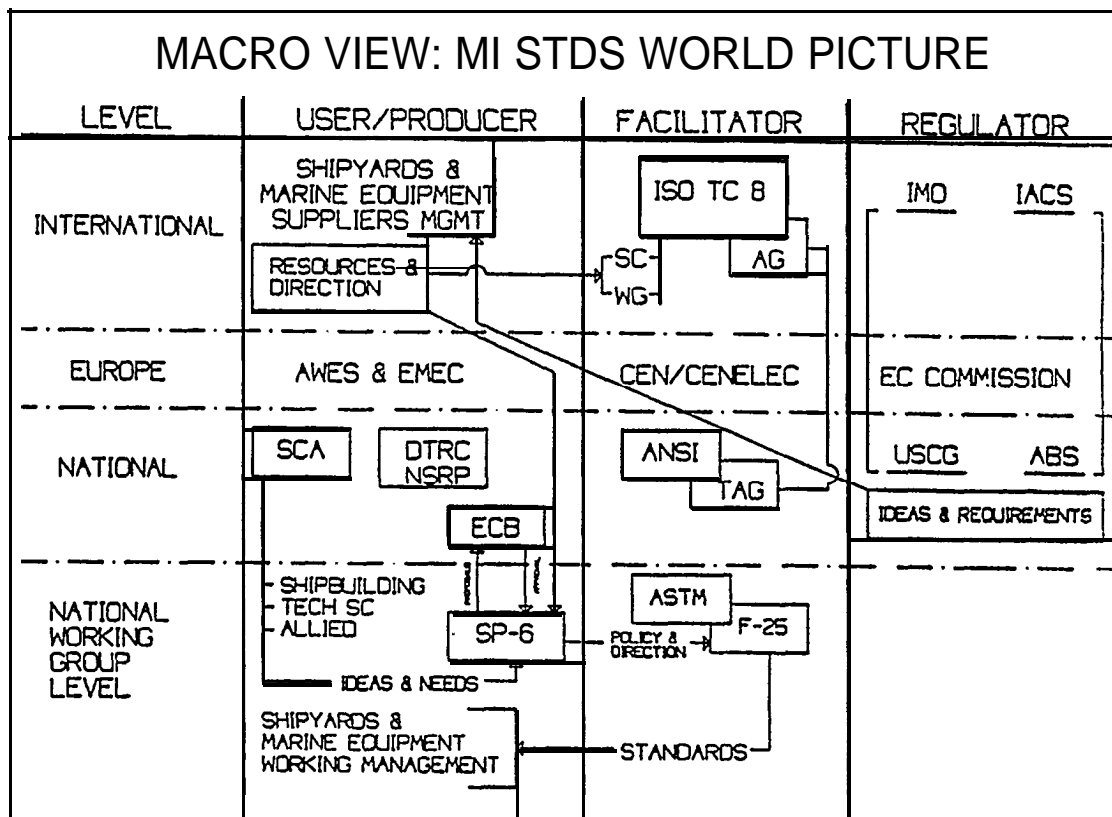


Figure 11  
Caucus Model #1

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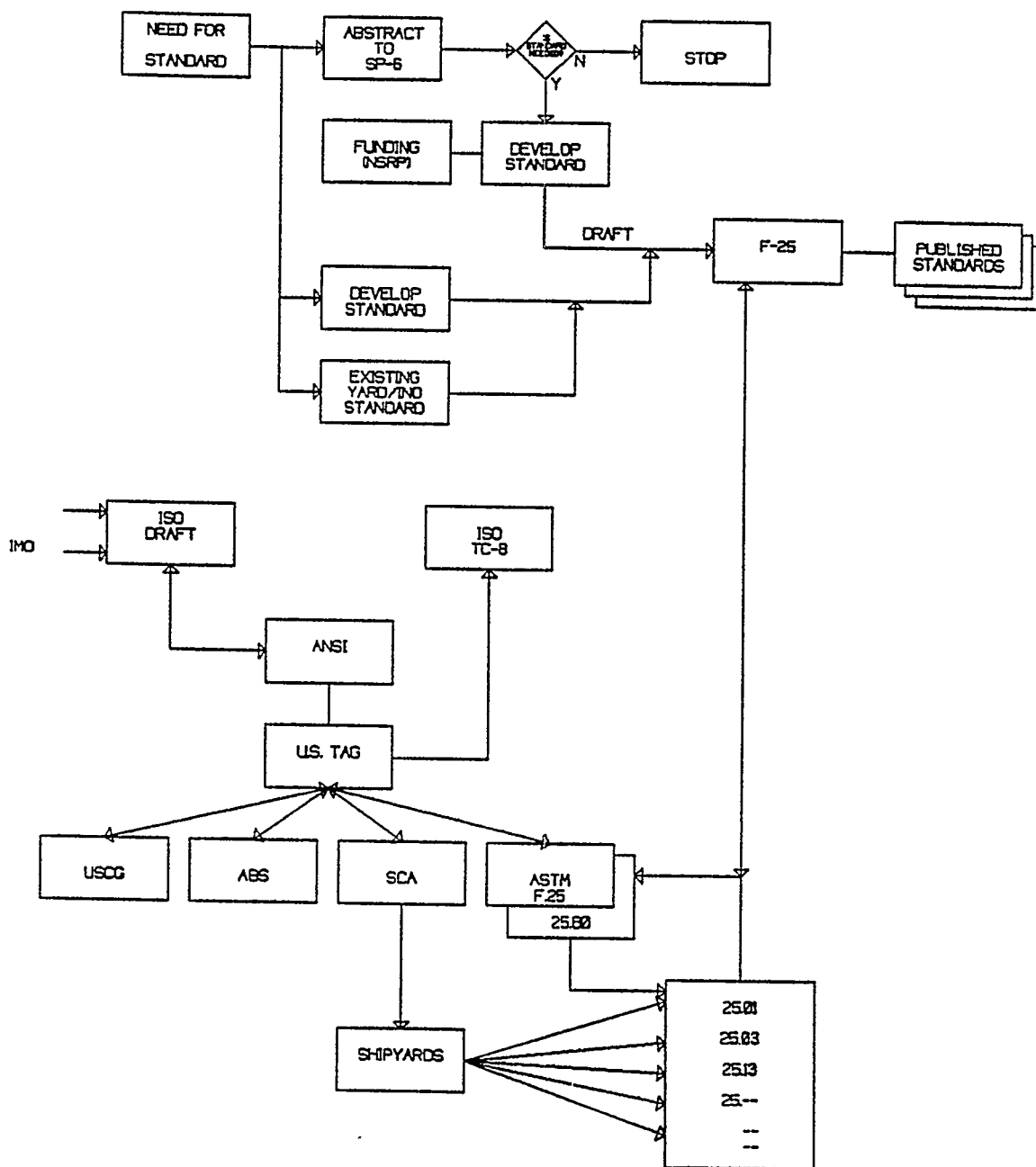


Figure III  
Caucus Model #2



Out of these summarizations, the group as a whole developed a consensus vision of the ideal Marine Industry Standards Program with the following characteristics:

**CONSENSUS VISION OF IDEAL MI STANDARDIZATION PROGRAM:**

- High level board of directors
  - \* Ship builders
  - \* Suppliers
- Long range plans
- Proper leadership
- Shortened development time
- Revamp SP-6 as a coordinating body
- Eliminate SP-6
- Continued Government participation
- Mechanism for recognition of new and emerging driving technology
- Unified strategy
- Who is driving the boat?
  - \* this must be known
- What is our central strategy
- Independent agreement on representative boards
  - \* Who will sit on the board?
- Owner/customer representation
  - \* Where in the process?
- Marine industry data base
- Central/focal points for MI standards
  - \* information
- Streamlined access to international standards
- Feedback mechanism for impact of standards
- Proper funding for travel
  - \* technical analysis beyond voluntary
- Cooperation
- Quick review of existing standards
- Method usage of implementation

This list of characteristics was further refined into five major groups as follows:

**1. FUNDING**

- Government “seed catalyst”
- Industry “consortia”
  - \* foundation
- “Fee” based
- Joint funding support from government & industry
  - \* government seed or catalyst funding
  - \* resource pooling by industry

Joint funding by government & industry  
\* government support through seed funds  
\* resource pooling by industry

**2. LEADERSHIP**

“Vision” communicated from user representatives including SCA or the ECB.

**3. INTERNATIONALIZATION**

Metrication

Development of new standards in SI

“Rapid” adoption of appropriate international and foreign standards

Match foreign standards and domestic counterparts

Increased support for U.S

\* Representation in international standardization efforts

Investigation of development process for:

\* Expedition of the internationalization of U.S. standards and nationalization  
of foreign standards

**4. COOPERATION**

Roles of participants

**5. ACCOUNTABILITY/RESPONSIBILITY**

Industrial survival

Effective review process

Ensure success of endeavor

Recognition that standardization is top priority

- top people

**OVERNIGHT PROJECT: TEAM GOALS AND EMERGING THEMES**

As an evening assignment, the participants were challenged with developing a list of Strategic Goals that are needed to realize our vision of the Marine Industry Standards Program. The Goals were to be focused on the following list of issues that have been identified in the past 1 1/2 days.

**COMMITMENT ISSUES:**

Resources/volunteers/supply fund

Marketing promulgate awareness

**International standards usage**

- database/library
- metrication

**Refined standards development process**

- organizations
- profit
- responsibilities

**Standards responsive to current needs**

**Communication**

**PROCEEDINGS: DAY THREE**

**WEDNESDAY, MARCH 11, 1992**

**FOUNDATIONS OF THE ACTION PLAN**

**VISION STATEMENT**

**Based upon the previous two days' output, a Vision Statement was developed:**

**UNITED STATES SHIP AND MARINE TECHNOLOGY  
STANDARDIZATION EFFORT**

**OUR SHIP AND MARINE TECHNOLOGY STANDARDIZATION PROGRAM SHALL SUPPORT INDUSTRY GLOBALIZATION. IT WILL:**

**Be a cooperative effort between standard setting bodies and standards users where participants have well understood and effectively coordinated roles.**

**Be recognized as an important element in global competitiveness by top level industry decision makers.**

**Be guided by a vision communicated by user representation bodies including the SCA and the ECB of the NSRP.**

**Be supported by joint funding from government and industry with government-provided seed funds and industry resource pooling.**

**Support expedition of the internationalization Of U.S. standards and the nationalization of foreign standards resulting in:**

- 1. Matching foreign standards with domestic counterparts.**
- 2. The rapid adoption of appropriate international and foreign standards.**

**Maintain/increase support for U.S. representation in international standardization/standards programs.**

**Commit to the full conversion to metric measurement and standards.**

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The strategic Goals developed the previous evening were shared within the teams and integrated into team strategies. These were then voted upon by all participants individually, using the following scale:

- (\*) - absolutely critical, must pursue
- (X) - important also
- (-) - will not work, cannot support

STRATEGIC GOALS	*	X	-
Promulgate the plan (output of the workshop)	14	5	1
- execute			
- get feedback			
- continually improve			
Enlist the U.S. MI into an open, cooperative partnership for sharing standards and for forming a national standards program	12	F	0
Establish SP-6 as Maritime Standards Policy Board:	10	3	4
- made up of high level technical, shipyard, supplier, representatives, etc.			
- set priorities and policy			
- delegate tasks to appropriate tech			
- monitor progress			
S			
Have a library of MI standards from ISO for the international market and the U.S. easily accessible (2 yrs)	10	6	1
Written commitment from CEO's (90 days)	5	5	7
Develop/execute marketing strategy for plan	12	3	1
Revise the ASTM F-25 standards developed in the 80's to be more applicable to commercial vessels (3 yrs)	2	11	3
Revamped mission of SP-6	11	5	0
- industry acceptance/recognition of SP-6 role			
Have all standards developed with of goal of becoming ISO standards	5	10	1
Work with key players to expedite use of metric system	2	11	2
Convert industry to SI (design, materials, process inventory)	14	1	0
Plan for long range for a national MI standardization program consistent with expected available resources	8	6	1
Develop working relationship with all standards bodies	7	7	1
Panel needs to strengthen membership	5	7	3
- more. involved shipbuilders/repairers			
Evaluate ISO and other international standards for adoption	7	8	0
Gain more domestic involvement in standards community	7	7	0

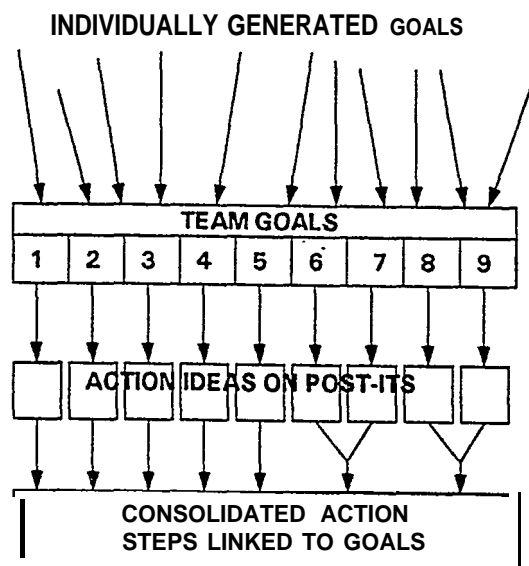
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<b>STRATEGIC GOALS CONT'D</b>	<b>*</b>	<b>x</b>	
Obtain funding to reflect new mission - identify new sponsors besides NSRP	2	6	6
Become more involved in international standards	8	6	0
Establish a network of designated standards representatives at each shipyard and supplier	7	6	0
Increase volunteers to a minimum of 1 highly qualified professional to 1 per 1000 employees (3 yrs)	3	9	1
Provide quality products and promote customer satisfaction	9	4	0
Use ANSI/ISO process	6	6	1
Increase the visibility and utilization of standards in the world markets	3	10	0
Forming of coalition to develop standards database	0	7	5
Support F-25/ISO TAG (see "written commitment" above) - provide people and time to develop and evaluate standards (see "evaluate ISO" above)	6	6	0
Develop a set of standards that reflect current and emerging technologies in the marine industry and keep them up to date	11	1	0
Refine standards development process	0	9	2
Redefine the industry wide organization for the development, adoption, and implementation of standards	5	4	2
Produce quality standards in a minimum amount of time	2	8	0
Reduce overall ship acquisition process time	7	3	0
Reduce cost to build and repair ships	7	3	0

## STRATEGIC GOALS & ACTION STEPS

These individual Goals were subsequently refined into Participants then individually generated recommended actions on Post-Its for each of the nine Goals. Subteams were then formed to consolidate the action ideas from the Post-Its into a more manageable set of Recommended Action Steps. Graphically, the process was modeled as shown below.



The Team Goals, the individual action ideas (Post-its), and the resulting Action Steps are presented on the following pages for each Team Goal.

### GOAL 1

Develop a process for communicating standards and standardization for ships and marine standardization to:

- Shipyard top management
- Industry top management
- Other industrial leagues
- The world market
- Working level yard managers

**POST-IT NOTES FOR GOAL #1**

SP-6 program manager to send periodic letters to CEOS on status of program  
notify industry of SP-6'S "new" leadership role  
use existing NSRP projects for ISO and compendium newsletter and redirect  
focus from SP-6  
what = > brochure describing the overall picture of MI standardization -  
international, foreign, U.S. domestic activities  
who = > NSRP/SP-6 with professional assistance  
when = > within 6 months  
what = > case studies describing how specific standardization benefitted or  
penalized the industry organizational company  
how = > incentive/prize for those submitting case studies  
solicit written commitment from CEO's within 5 years

**CONSOLIDATED ACTION STEPS FOR GOALS #1 & 2**

\*Asterisked numbers refer to the Action Steps on the  
Summary of Recommendations page 55.

**General:**

- |    |    |   |
|----|----|---|
| *1 | 1) | Prepare brochure explaining overall picture of MI standardization<br>(international, foreign, and U.S)  |
|    | 2) | Within 6 months   |
| *2 | 3) | Distribute to (1) top management with the personal transmittal from<br>president of SCA; (2) key players in the U.S. and foreign<br>organizations; (3) announce availability in trade press, ANSI Reporter,<br>and ISO News |

**Top Management:**

- |    |    |   |
|----|----|---|
| *4 | 1) | Personal letter from chairman of NSRP and SP-6 to top management<br>advising of new initiatives and revamped approach/program |
| *5 | 2) | Periodic follow-up  |
| *6 | 3) | Reports/presentations at annual meetings and/or Board of Directors of<br>SCA  |



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**Middle Management:**

- \*7      1)      Report on actions and deliberations of each SP-6, F-25 and TC-8 (and SCS and TAG) meetings in the:
  - a.      Shipyard Chronicle (within 2 wks)**
  - b.      NSRP Newsletter**
  - c.      ANSI Reporter**
  - d.      Other trade press****
- \*8      2)      Sponsor sessions on standardization issues at major technical and industrial conferences.**
- \*9      3)      Invite (formally and through trade press) each affected organization to identify a point of contact for:
  - receiving and disseminating information**
  - collecting views and positions and transmitting to responsible organizations****
- \*10    4)      Promote (thru incentive or prize) submission of case studies describing how specific standardization actions benefitted or penalized the industry or a company.**
- \*11    5)      Develop a mailing list of potential SP-6 and F-25 members.**

**GOAL 2**

Implement a communications system to:

- Disseminate information on proposed and new standardization actions.
- Serve as a sounding board for proposed new initiatives.
- Communicate industries consensus position on proposed national and international standards and processes.

**POST-IT NOTES FOR GOAL #2**

develop and install industry E-mail system  
could utilize the SP-6 meeting minutes  
through participation (direct or corresponding) in SP-6  
have each participating organization identify the point of contact for receiving  
and disseminating information, collecting views and positions, and transmitting  
them to responsible organizations  
use existing NSRP Newsletter or SCA'S Shipyard Chronicle  
what = > quarterly newsletter on standardization actions and developments of  
significance to U.S. MI  
who = > NSRP/SP-6 with professional assistance  
when = > after brochure is circulated

(Action Steps combined with those of Goal #1)

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**GOAL 3**

Promote the national ship and marine technology standards program by:

- Enlisting greater yard participation through the development and implementation of a marketing plan.
  - Reaching over 90% participation of the SCA member yards in the development process within 5 years.
- Increasing the awareness of the ship and marine technology standards program in the international marketplace.  
Establishing a network of members at all shipbuilders and allied industries to support product marketing through the use of standards.

**POST-IT NOTES FOR GOAL #3**

report of workshop's efforts presented to shipbuilders/allied industries  
paper/article published in major industry publication with a possible title of  
"Renewed Effort for Ship/Marine Standards" (6 months)  
could utilize a feature article in the NSRP Newsletter  
SP-6 should be the developer  
identify the leading organization: SP-6?, F-25?, something new  
SP-6 form a "PR" subcommittee to develop (for example): articles in industry  
magazines, company newsletter, information booklet on standards and the  
need for standardization  
SP-6 should establish a subcommittee in SP-6 to develop and disseminate  
information reports about their activities regularly  
establish an SP-6 Ad-Hoc committee to provide this promotion plan  
SP-6 create a formal report to identify volunteers for the ship and marine  
technology standards program to include an address, phone number and warm  
body as point of contact  
SP-6 establish a marketing plan to include on site seminars, fact sheets,  
visibility at symposiums, conventions, etc.

**CONSOLIDATED ACTION STEPS FOR GOAL #3**

- |     |  |
|-----|--|
| *12 | 1) The SP-6 Ad-Hoc Publicity Committee Chairman shall develop promotional material on the U.S. Ship M.T. standards program and why it will make U.S. built equipment and ships better in the global market |
| *13 | - develop brochure in the first year   |
| *14 | - attend International Ship Owner/Operator conferences during second year  |
|     | - submit articles to trade journals and magazines annually   |

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- \*15    2)    Write feature article for NSRP Newsletter; Chairman -30 daytime frame**
- \*16    3)    Report of workshop efforts; chairman - to:**  
**- Shipbuilders Council of America (within 6 months)**  
**- ECB, program managers, and chairman of SP Panels at next meeting (3 months)**
- \*17    4)    Report of these meeting proceedings along with presentation material to Marine Log, etc. (after each meeting)**
- \*18    5)    SP-6 should name an individual (address and telephone number) within 60 days to serve as focal point and to collect information and disseminate appropriate information as prescribed in the marketing plan**
- \*19    6)    SP-6 establish an Ad-Hoc Committee for Public Relations and Marketing at their next scheduled meeting; the Public Relations Committee to develop (for example):**  
**- fact sheets (can be used as input for company newsletter)**  
**- articles in trade journals and magazines annually**  
**- booklet on standards and the need for standardization for MI**  
**- disseminate regular reports of their activities**
- \*20    7)    Committee be represented for visibility at symposiums, conventions, etc.**
- \*21    8)    Identified network member at each shipyard or allied industry will publish a standards article in their newsletter at least once a year. This article will be sent to the ad-hoc SP-6 committee for the use of other network members for future articles; article should be written within 6 months**

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**GOAL 4**

Establish a firm structure between standards organizations and advisory groups with well defined roles and relationships which will:

identify, prioritize, and manage initiatives which are responsive to the needs and goals of the NSRP.

Accelerate the standards development process.

Place emphasis on adopting and developing international standards.

**POST-IT NOTES FOR GOAL #4**

- eliminate SP-6
- SP-6 appoint a committee to work with F-25 to model the organization and to establish a clearly defined working relationship
- modify SP-6 operating charter to reflect the output of this workshop
- who = > SP-6:
- what = > define how MI will identify, prioritize, and manage initiatives which are responsive to NSRP goals - define means to accelerate process
- when = > December meeting in conjunction with ASTM meeting
- where = > wherever the meeting takes place
- have NSRP Executive Control Board re-constitute SP-6 with high-level technical profile from shipyards and major suppliers (include representation from ASTM F-25 Exec Board)
- have NSRP, ECB develop a new SP-6 charter assign them responsibility for identifying priorities and managing standards initiatives which support NSRP goals
- have NSRP and ECB chairman request SCA Executive Board to review process on an annual basis based on economic input of standard initiatives and provide feedback
- review standards div. process with ASTM and F-25 with an eye towards speeding up the process
- SCA/ECB survey members for standards needed and standards now used
- provide a fast track system so that negatives can be resolved and a supplemental be provided to resolve the negative
- survey shipbuilders list of the top 25 standards you use today
- survey shipbuilders - what top 5 or 10 industry standards would you like developed

**CONSOLIDATED ACTION STEPS FOR GOAL #4**

- \*22    1)    NSRP/ECB evaluate their role in MI/Shipbuilding standards development in the light of this workshop (6 months)
- \*23    2)    SCA/ECB survey members for:
  - high priority standards needed
  - what international standards are being used

**GOAL 5**

To use S1 as the standard of weights and measures in the U.S. Shipbuilding Industry within 3-5 years for design manufacturing and purchasing, and information and documentation.

**POST-IT NOTES FOR GOAL #5**

encourage hard metric conversion on all new and revised standards wherever it can be done cost effectively and be definite about tolerances allowed as soon as possible  
have CAE & CAD programs require new revisions to be based in SI units:  
    who = > supporter base  
    when = > next revision level  
identify industry central metric transition coordinating body  
draft an SI implementation strategy for dissemination to the industry  
develop general form of metric transition plan to provide to shipyards  
specify new designs concepts in SI: Fast SeaLift, DTRC  
spec. ships in SI - if Navy hasn't converted charge extra to get it in English units; shipyards - after converted 3 yrs  
begin to use SI units in internal specifications  
request vendors and suppliers quote technical responses in SI units  
    who = > purchasing departments  
identify sources and distribute information on metric transition, other industries converting to metric  
shipyard establish its own date for total on stages of transition  
have regulatory classification and federal agencies require submission of data in SI units; 1-2 years  
    who = > directive from federal agencies, regulatory societies, USCG

**CONSOLIDATED ACTION STEPS FOR GOAL #5**

- \*24    1)    Have SP-6 identify industry Central Metric Coordinating Body (6 months)
- \*25    2)    Have Metric Coordinating Body draft an SI implementation strategy for dissemination to the industry (1 year)
- \*26    3)    Coordinating Body  
            - identify sources and distribute information on SI transition, including other industries converting to metrics (1 year - 1 1/2 years)
- \*27    4)    Shipyards report on their schedules for transition to SI units
- \*28    5)    Shipyards encourage suppliers, regulators to convert to SI units

**GOAL 6**

Establish a source of standards from all international sources within 2 years.

**POST-IT NOTES FOR GOALS #6 & 7**

establish WG within SP-6 to do comparison  
from list of identified equivalent standards generated by Japanese review  
based on SP-6 funded data base index project  
redirect compendium project to get: money when FY 92 money comes in,  
\$50,000 for 2 years  
NSRP to organize a feasibility study to develop a national database within 6  
months  
continue to develop and expand on-line standard database tools  
establish a Marine Industry clearinghouse/information center with copyright  
license to reproduce and distribute standards used by Marine Industry  
demand that the licensed value-added resellers prepare a library of standards  
tailored to MI requirements

**CONSOLIDATED ACTION STEPS FOR GOAL #6**

- \*29    1)    SP-6 - Conduct feasibility study to determine best source of standards  
(1 year)

**GOAL 7**

Evaluate ISO and other foreign standards to identify equivalency to U.S. standards in 4 years.

**CONSOLIDATED ACTION STEPS FOR GOAL #7**

- \*30    1)    SP-6 - Establish with group to do comparison of Industry Foreign and Domestic Standards



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**GOAL 8**

Research, develop, and implement a plan to budget and to obtain funds from:

NSRP

Other DOD (there are 106 DOD standards activities)

DOC

\* NIST Regional Tech centers - Ann Arbor

\* EC92

DOT

DOE

Team with other trade associations

Minimum commitment

In Total	FY 93	FY 94	FY 95
	\$500K	\$ 1000K	\$ 2M

**POST-IT NOTES FOR GOALS #8 & 9**

establish MI standards trust fund (\$ pool)

use SP-6 Master Plan project to investigate and publicize possibilities on these sources

SCA to promote need for volunteers to the shipyards

SCA/SP-6 to request shipbuilders to provide listing of major shipbuilders and

SP-6 send out need for volunteers call to suppliers

document cost savings/avoidance through standardization to benefits of system; earn money support for SP-6 project, \$ 20,000 plus shipyards

have SCA impress growth in volunteerism from its members and ally with

AWO to coordinate participation from AWO members

**CONSOLIDATED ACTION STEPS FOR GOAL #8**

\*31, 32      **WHAT:**            Establish MI standards trust fund

**WHO:**            NSRP "Special Projects" Team

**WHEN:**          1st Year - feasibility and identification of potential  
   contributions  
   2nd Year - establish trust fund

**INITIATOR/COORDINATOR:**  
                                 David Taylor Research Center (1st); SCA (fall back)

**GOAL 9**

**Increase volunteers from shipyards.**

**- to Support ASTM F-25**

**from 1 + now to**

**> 25 in one year**

**> 40 in two years**

**To support SP-6 through the promotion of joint utilization of professionals on SP-6 and F-25.**

**To support ISO TC8, subcommittees and working groups**

**\* 10 in one year**

**\* 20 in two years**

**\* 25 in the third year and maintain at this level**

**To identify other standards bodies relevant to the industry and achieve representation on these bodies.**

**CONSOLIDATED ACTION STEPS FOR GOAL #9**

- \*33    1)    SCA will strongly promote the need for shipyard, allied industries, and Naval Architect members to contribute volunteers to participate in ASTM F-25, ISO TAG Subcommittee, and working organizations as identified.**
- \*34    2)    Joint SCA/NSRP solicitation letter in 90 days.**
- \*35    3)    SCA/SP-6 will request its shipyard members to provide address lists of its major suppliers.**
- \*36    4)    SP-6 shipyard members/suppliers will recruit volunteers, preferably through their yards, general management or procurement department.**
- \*37    5)    SCA will work with AWO to recruit volunteers from their members.**

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**SUMMARY OF RECOMMENDATIONS**

The final and most definitive outcome of the Workshop was the generation of the Action Steps. Time constraints did not permit the performance of the next step on the Agenda, which was to solidify the Action Steps into an Action Plan. In order to accomplish this, the following Summary of Recommendations has been compiled which groups the Action Steps into general categories and assigns rough schedules and responsibilities to them. Since this summary was done off-site, there was no attempt to "add value" to the Action Steps that the Workshop generated, but simply to interpret them into a more cohesive format.

The Summary identifies each Action Step with the Goal that it supports. The column headed "SCH" provides an indication of the time that will probably be required before the recommended action can be fully implemented. The code letters are:

- C - continuing effort
- S - Short term, 1 -12 months
- M - Mid-range, 1 -3 years
- L - Long range

Each Action Step identifies the primary action agency. In a few instances, more than one organization may be listed where it is recommended that they work together. Wherever the responsible organization is not implicit in the Action Step or Goal, the action is assigned to Panel SP-6.

**SUMMARY OF RECOMMENDATIONS**

GOAL	ACTION STEP	SCH	RESPONSIBILITY PRIMARY/SEC'Y
I & 2	1. Prepare a brochure explaining Marine Industry (MI) Standardization.	S	Panel SP-6
"	2. Distribute brochure to top management/key players via SCA President.	S	SCA/Panel SP-6
"	3. Announce availability of brochure in trade publications.	S	Panel SP-6
"	4. Letter from NSRP & SP-6 Chairman announcing new program.	S	Panel SP-6/NSRP Chairmen
"	5. Follow-up on #4.	C	Panel SP-6/NSRP Chairmen
"	6. Reports/presentations to SCA.	C	Panel SP-6
"	7. Report on SP-6/F-25/TC-8 actions in trade publications.	C	Panel SP-6/F-25

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<b>GOAL</b>	<b>ACTION STEP</b>	<b>SCH</b>	<b>RESPONSIBILITY PRIMARY/SEC'Y</b>
<b>1&amp;2   cont.</b>	<b>8. Sponsor sessions on standardization at major trade conferences.</b>	<b>C</b>	<b>Panel SP-6</b>
<b>"</b>	<b>9. Solicit Points of Contact at affected organizations.</b>	<b>S</b>	<b>Panel SP-6 "</b>
<b>"</b>	<b>10. Solicit case studies of standardization successes in the industry or a company.</b>	<b>C</b>	<b>Panel SP-6/SCA</b>
<b>"</b>	<b>11. Develop mailing list of potential SP-6 and F-25 members.</b>	<b>S</b>	<b>Panel SP-6/F-25</b>
<b>3</b>	<b>12. Develop promotional materials (brochure) for MI standards program in first year. (Ref. A.S. #1).</b>	<b>S</b>	<b>Panel SP-6 ad hoc Publicity Committee</b>
<b>"</b>	<b>13. Attend Ship Owner/Operator conferences second year.</b>	<b>M</b>	<b>Panel SP-6</b>
<b>"</b>	<b>14. Submit articles to trade publications annually. (Ref. A.S.#3 &amp; #7).</b>	<b>C</b>	<b>Panel SP-6/F-25</b>
<b>"</b>	<b>15. Write feature article for NSRP Newsletter.</b>	<b>S</b>	<b>NSRP Chairman</b>
<b>"</b>	<b>16. Report Workshop efforts to SCA, P. M.'s. Panel Chairmen at next meeting.</b>	<b>S</b>	<b>Panel SP-6 Chairman</b>
<b>"</b>	<b>17. Submit report of meetings (A.S. #16) for articles in trade publications.</b>	<b>S</b>	<b>Panel SP-6</b>
<b>"</b>	<b>18. Identify Points of Contact to support marketing plan. (Ref. A.S. #9).</b>	<b>S</b>	<b>Panel SP-6</b>
<b>"</b>	<b>19. Establish an ad hoc Committee for P.R. to develop fact sheets, articles, and booklets on MI Std. (Ref. A.S. # 1, 3, 7, 12, 14, 17).</b>	<b>S</b>	<b>Panel SP-6</b>
<b>"</b>	<b>20. Provide representation at symposiums, conventions, etc. (Ref. A.S. #8).</b>	<b>C</b>	<b>Panel SP-6</b>
<b>"</b>	<b>21. Write articles for company (shipbuilders &amp; allied industries) newsletters, network to others.</b>	<b>S,C</b>	<b>Panel SP-6</b>
<b>4</b>	<b>22. Evaluate the role of NSRP/ECB in MI Standards in light of the Workshop.</b>	<b>S</b>	<b>NSRP/ECB</b>
<b>"</b>	<b>23. Survey SCA/ECB members for -Standardization priorities, international usage.</b>	<b>S</b>	<b>SCA/ECB</b>
<b>5</b>	<b>24. Identify industry "Central Metric Coordinating Body".</b>	<b>S</b>	<b>Panel SP-6</b>

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GOAL	ACTION STEP	SCH	RESPONSIBILITY PRIMARY/SEC'Y
"	25. Draft an SI implementation strategy for the industry.	M	Central Metric Coord'g Body (#24)
"	26. identify sources of information on SI transition and distribute to industry.	M	Central Metric Coord'g Body (#24)
"	27. Report shipyard schedules for transition to SI.	S	Shipyards/Panel SP-6
"	28. Encourage suppliers, regulators to convert to SI units.	S	Shipyards/Panel SP-6
6	29. Conduct feasibility study to determine best source of standards.	S	Panel SP-6
7	30. Establish group to compare foreign and domestic industry standards.	S	Panel SP-6
8	31. Conduct feasibility of establishing MI Standards trust fund.	S	DTRC/SCA/NSRP "Special Projects" Team
"	32. Establish MI Standards trust fund.	M	"
9	33. Promote the need for key organizations to contribute volunteers for F-25, ISO-TAG, etc.	S	SCA
"	34. Draft a joint SCA/NSRP solicitation letter (A.S. #33).	S	SCA/NSRP
"	35. Request shipyard members to provide address lists of major suppliers.	S	SCA/SP-6
"	36. Recruit shipyard, supplier volunteers.	S	Panel SP-6
"	37. Work with AWO to recruit volunteers from their members.	S	Panel SP-6

**APPENDIX:**

- A. Outline of Remarks Delivered to Marine Industry Standards Planning Workshop, March 10, 1992; by Lennard G. Kruger
- B. The International Standards Organization (ISO); Status Report

APPENDIX A

**OUTLINE OF REMARKS DELIVERED TO MARINE INDUSTRY  
STANDARDS PLANNING WORKSHOP, MARCH 10, 1992**

**By Lennard G. Kruger  
Specialist in Science and Technology  
Science Policy Research Division  
Congressional Research Service**

**Background**

**Congressional interest in the standards issue, in part, dates back to 1965 when the LaQue Panel (the ad hoc panel on Engineering and Commodity Standards), which had been covered by the Department of Commerce, recommended legislation to establish a national coordinating institution for voluntary standardization with international recognition equivalent to that of national standards bodies in other countries. The Panel recommended reconstituting the American Standards Association (ASA) and giving ASA a Federal charter rather than forming a new organization. These recommendations were not acted on, but throughout the sixties and seventies there were various pieces of legislation that would give the Secretary of Commerce the authority to make arrangements with private sector organizations to ensure that U.S. interests would be adequately represented in international standards organizations. To this end, legislation was enacted in 1979 -- the Trade Agreements Act of 1979 (P. L. 96-39).**

**NIST Hearing**

**The debate on whether the Federal government should play a more active role in international standardization again surfaced in the late 1980's. In December of 1989, the National Institute for Standards and Technology (NIST) issued a notice in the Federal Register asking the private sector to comment on the following questions:**

- Does the U.S. standards system, as presently constituted, adequately serve the Nation's international climate?**
- Is there adequate participation by representatives of the public and private sectors? In other countries do governments play a more formal role in standards? Are their systems more effective than ours? What should be the U.S. government's role?**



If more coordination is needed among the many U.S. interests concerned with standards and trade, what changes might be beneficial? Is the standards council of Canada a model which the U.S. should consider?

Many of the private sector standards community charged that NIST was attempting to regulate the voluntary standards system by promoting a quasi government organization called the Standards Council of the USA (SCUSA) which would provide financial assistance, effect agreements with foreign governmental entities, and most controversially, accredit standards developers to international organizations. A public hearing, held in March 1990, resulted in widespread support for the existing private sector standards system and opposition to SCUSA. However, there was some support expressed for the Federal aid, in the form of grants or tax credits, to assist U.S. participation in international standards organizations.

#### Office of Technology Assessment (OTA) Report

In August 1990, the House Science committee asked OTA to conduct a study which would:

1. assess the effectiveness of U.S. representation in the international forums and evaluate the impact international standards setting is having on the U.S. ability to export;
2. review roles played by other governments in their international standards setting activities; and
3. consider whether the U.S. government should play a greater role in funding international standards development and standards assistance to developing countries.

The OTA study, *Global Standards: Building Blocks for the* completed in March 1992. Aside from addressing the questions of the Committee, the OTA study focuses on:

1. to what extent does the U.S. standards process support the growth and competitiveness of the U.S. economy in a rapidly changing global environment;
2. to what extent, and in what ways, are the current set of organizational arrangements a factor in determining the system's performance; and

3. under the current set of circumstances, what kinds of organizational changes if any, might lead to enhanced performance.

**Key findings of the OTA study are as follows:**

1. A growing national stake in standards -- government has a stake in the effectiveness of a standards system.
2. Insufficient support for standards setting.
3. The need for cooperation rather than conflict.
4. The need to strike a more appropriate balance between the public and private sectors.
5. Inadequate federal coordination and policymaking.
6. Need for greater attention to how other governments use standards to create markets for their nation's industries.
7. Persistent due process issues.

In its report, OTA identifies three policy strategies and a series of options associated with these strategies to address identified standards issues. These strategies are as follows:

**Strategy 1 -- Provide more substantial government support for standards processes to address market failures resulting from public-goods aspects of standards.**

**Strategy 2-- Promote the development of an information infrastructure for accessing and distributing standards, and participating in standards development processes.**

**Strategy 3-- Improve the process of standardization through organizational restructuring.**

#### **House Science, Space and Technology Committee Hearings**

On March 4, 1992 the House Committee on Science, Space and Technology Subcommittee on Technology and Competitiveness held a hearing on international standards and trade issues. Several standards organizations (i.e., ANSI, ASTM, and ASME) commented on the pros and cons of the OTA findings and recommendations, while also discussing the issue of how the

**Federal government might support international standards and the standards system in the United States.**

#### **Future Prospects**

**Perhaps most controversial among the policy options identified by OTA is the establishment of a public corporation or instrumentality to focus on public/private standards goals. To the extent that Congress acts upon this and/or other policy strategies and options identified in the OTA report, the standards issue promises to be controversial in the months to come.**

APPENDIX B

# THE INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)

## TECHNICAL COMMITTEE FOR SHIPS AND MARINE TECHNOLOGY (TC-8)

### A STATUS REPORT

MARCH 1992

Charles H. Pierzall, Jr.  
Chairman, U.S.  
Technical Advisory Group  
ISO/TC-8

## ISO

### WORLDWIDE FEDERATION OF NATIONAL STANDARDS BODIES

- **89 MEMBERS, 1 PER COUNTRY**
  - . 74 MEMBER BODIES,
  - . 16 CORRESPONDING MEMBERS
- **WORK CARRIED OUT THRU**
  - 2660 TECHNICAL BODIES (INTERNATIONAL)
  - 172 TECHNICAL COMMITTEES
  - : 640 SUBCOMMITTEES
  - . **1760** WORKING GROUPS
- . **ONGOING WORK**
  - . RESULT: ISSUE OF >7500 STANDARDS
  - . 6500 WORK ITEMS IN TECH COMMITTEES
  - . 672 TECH MEETINGS HELD IN 6 MO PERIOD

## ISO VIEWS:

### TOMMORROW = ISO AND GLOBAL STANDARDIZATION

- . **INDUSTRY WIDE STANDARDIZATION**
- **ISO STANDARDS (DOCUMENTED AGREEMENTS)**
- . **BENEFITS (MARKET PERFORMANCE IMPROVEMENTS)**

## ISO VIEWS:

### ISO'S VISION OF ITS EXTERNAL ENVIRONMENT

- **GROWTH IN GLOBAL TRADE**
- **GLOBAL INDUSTRIES**
- **TECHNOLOGY - INNOVATION - PRODUCTION**
- **IEC**
- **EC 1992**
- **NATIONAL PROTECTIONISM**

## ISO TC-8

- **140 STANDARDS ISSUED**
- **OTHER TCs AFFECT SHIPBUILDING AND SHIP OPERATIONS e.g. -** JTC 1, TC 67, TC 70, TC 108, TC 115, TC 178, TC, 192,, et al

## ISO TC-8 FOCUS

### PRIOR TO 1990-

SHIP COMPONENT ENGINEERING  
SUPPLIERS  
MATERIALS AND COMPONENTS

### SINCE 1990 =

SHIP DESIGN  
SHIP ENGINEERING  
SHIP SYSTEMS ENGINEERING  
OPERATION OF SHIPS  
ENVIRONMENT PROTECTION

## ISO TC-8 SHIPS AND MARINE TECHNOLOGY

### SUBCOMMITTEES:

SC 7 . INLAND NAVIGATION VESSELS	RUSSIA
SC 8 . WINDOWS AND SIDE SCUTTLES	NETHERLANDS
SC 9 . LIFESAVING EQUIPMENT	JAPAN
SC 10- DECK MACHINERY	ITALY
SC 15. COMPUTER APPLICATIONS IN SHIPBUILDING	NETHERLANDS
SC 18. NAVIGATIONAL INSTRUMENTS AND SYSTEMS	JAPAN
SC 20. SHIP'S BRIDGE LAYOUT AND ASSOCIATE EQUIPMENT	NORWAY
SC 23. GLOSSARY OF SHIPBUILDING TERMS	JAPAN

### SECRETARIAT

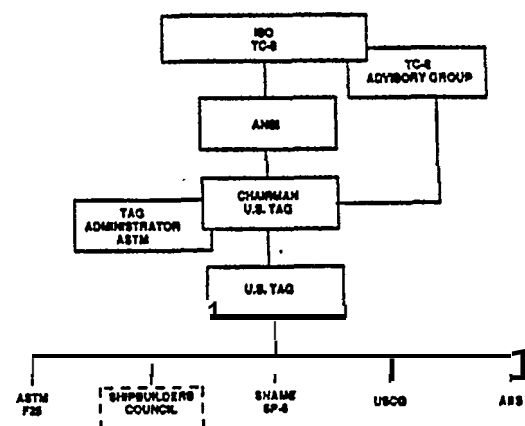
## ISO TC-8

### SHIPS AND MARINE TECHNOLOGY

#### WORKING GROUPS:

		CONVENER
WG18-	LIFTING GEAR AND ACCESSORIES	GERMANY
WG 24.	REVIEW OF EXISTING MARITIME STANDARDS	GERMANY
WG 25.	INCINERATORS ONBOARD SHIPS	USA
WG 26.	SHIP MACHINERY	USA
	Walson with .	
	TC 70 . DIESEL ENGINES	
	TC 115. PUMPS	
	TC 182. GAS TURBINES	

OVERALL ISO LIASON WITH IAPH IS CHAIRMAN, U.S. TAG (TC.8)



## U.S. TAG ISO/TC-8

C. PIERSALL,	CHAIRMAN
E. BARRETT,	ASTM F 25,80, SNAME SPC LIAISON
T. HOPKINS,	WG 26
G. ASHE,	ABS
H. HIME,	USCG, WG 25, IMO LIAISON

## U.S. TAG PARTICIPATION

TC8	ADVISORY GROUP MEMBER	Chairman-Charles Piersall
SC 7	MEMBER (P) STATUS	Need Volunteer
SC 10	MEMBER (P) STATUS	Need Volunteer
SC 15	MEMBER (P) STATUS	Need Volunteer
SC 23	MEMBER [P] STATUS	Need Volunteer
WG 24	MEMBER	Charles Piereall/ RADM Tom Hepkins
WG 25	CONVENER	Howard Himo
WG 26	CONVENER	RADM Tom Hepkins

## FOREIGN IMPACT

EC=92 = ISO STANDARDS TO BE USED  
WHERE THEY EXIST

“VIENNA AGREEMENT” - CEN/ISO

HEAVY JAPANESE INVOLVEMENT -

CHAIRMAN TC.8  
SECRETARIAT 3 SUBCOMMITTEES  
CHAIR 26% ACTIVE WORKING GROUPS  
JMSA REP RESIDES ON SITE IN NETHERLANDS

METRICATION

## ISO/IEC STRATEGIC ADVISORY GROUP ON THE ENVIRONMENT (SAGE)

• ORGANIZATIONAL MEETING 12 SEP 1991, GENEVA

• FOUR SUBGROUPS CREATED

- . ENVIRONMENTAL LABELLING
- . ENVIRONMENTAL AUDITING
- . ENVIRONMENTAL MANAGEMENT SYSTEMS
- . ENVIRONMENTAL PERFORMANCE STANDARDS

• THESE GROUPS COULD HAVE SIGNIFICANT IMPACT

- . ESTABLISHING METHODS AND TECHNIQUES TO EVALUATE  
AND CHARACTERIZE ENVIRONMENTAL EFFECTS OF PRODUCTS  
FROM INDUSTRIES IN ALL SECTORS.

- . WILL INPUT TO ISO/IEC TECHNICAL COMMITTEES

## ACTION FROM USA

- ATTENDED TC-8 ADVISORY GROUP MEETING - 1991  
- U.S. ADDED TO MEMBERSHIP
- CHAIR - 2 NEW WORKING GROUPS  
. SHIP MACHINERY  
. INCINERATORS
- PRINCIPAL STATUS ON 3 SUBCOMMITTEES  
(HOWEVER, REPS NEEDED)
- WE NEED VOLUNTEERS . PARTICIPANTS
- WE DON'T NEED “RICE BOWLS” STUDYING THE PROBLEM
- WE NEED YOUR SUPPORT

## 8 COMMANDMENTS OF STANDARDIZATION

- STANDARDIZATION MEANS SACRIFICE
- ‘THIS IS OUR STANDARD PRACTICE’ IS NO ARGUMENT
- EACH PROPOSAL HAS TO BE JUDGED ON ITS OWN MERITS
- IF THE IDEAL SOLUTION CANNOT BE REACHED AT THIS MOMENT,  
WE MUST ADOPT BEST COMPROMISE
- IF YOU CANNOT MAKE DECISION FOR YOUR OWN COUNTRY,  
DO NOT CONDEMN THE OPINION OF OTHERS
- DO NOT INSIST ON DISCUSSING MATTERS OF MINOR IMPORTANCE
- DO NOT TRY TO CHANGE SEQUENCE OF PARAGRAPHS  
OR ARGUE ABOUT EDITORIAL ARRANGEMENTS
- STANDARDIZATION MEANS COOPERATION